

# Fibre Channel Adapter STOR Miniport Driver for Windows

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## 1. Version

These release notes describe the changes, fixes, known issues, and release details that apply to QLogic Fibre Channel Adapter STOR miniport driver, version 9.1.9.25.

This driver package includes:

- ◆ Firmware version 5.4.2 (4Gb Fibre Channel adapters)
- ◆ Firmware version 5.4.2 (8Gb Fibre Channel adapters)
- ◆ API version 1.28.0.80 (QLogic Multipath Device-Specific Module [QLSDM])

## 2. Changes

The following changes have been made to the Fibre Channel Adapter STOR miniport driver between versions 9.1.8.25 and 9.1.9.25.

### Hardware Support

No changes

### OS Support

Support is limited only to versions of Windows Server 2008. This driver is not supported on any version of the Windows Server 2003 operating system.

## Software Components

- ◆ Firmware version: 5.04.02 (4Gb and 8Gb)
- ◆ Property page added

## Industry Standards Compliance

N/A

## 3. Bug Fixes

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The bug fixes made to the Fibre Channel Host Bus Adapter STOR miniport driver between versions 9.1.8.25 and 9.1.9.25 are detailed in section [6 History](#) and section [7 Firmware \(Embedded in Driver\)](#).

## 4. Known Issues

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The Fibre Channel Host Bus Adapter STOR miniport driver version 9.1.9.25, has the following known issues:

None

## 5. Additional Information

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None

## 6. History

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This section lists the changes that have been made to the QLogic Fibre Channel Adapter STOR miniport driver.

### 6.1 9.1.8.25 QL—12/11/09

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- ◆ Closed WMI mapping interoperability with HBAAPI.DLL issue.

### 6.2 9.1.8.19 QL—10/12/09

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- ◆ Driver restores 4G Fibre Channel PCIe Device Control and Link Control registers based on saved value.
- ◆ Closed ER0000000067688: In multi-processor systems, the clustering driver timer popped as a result of unrecovered i/o via LUN reset.

### 6.3 9.1.8.17 QL—05/21/09

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- ◆ Firmware versions: 5.01.02 (4Gb and 8Gb).
- ◆ API version 1.28.0.73 (QLSDM).
- ◆ Driver restores 4G Fibre Channel PCIe Device Control and Link Control registers based on saved value.

## 6.4 9.1.7.18 QL—05/22/08

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- ◆ Firmware versions: 3.03.25 (2Gb), 4.04.00 (4Gb and 8Gb).
- ◆ API version 1.28.0.63 (QLSDM).

## 6.5 9.1.7.17 QL—05/21/08

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- ◆ Added support for the following devices (supported platforms) (2.3m):
  - PCI\VEN\_1077&DEV\_8432&SUBSYS\_010E1077 (x86, x64)
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_014B1077 (x86, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01701077 (x86, ia64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01711077 (x86, ia64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01721077 (x86, ia64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01731077 (x86, ia64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01741077 (x86, ia64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01751077 (x86, ia64, x64)
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_004A1137 (x86, ia64, x64)
- ◆ Removed support for the following devices (supported platforms):
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_011C1077 (x86, x64)

**NOTE:** Microsoft requires x86 and x64 support for all Host Bus Adapters.

- ◆ Firmware versions: 3.03.25 (2Gb), 4.03.02 (4Gb).
- ◆ API version 1.28.0.63 (QLSDM).
- ◆ Added support for 64-bit QLSDM DLLs.
- ◆ Enabled FDMI by default.
- ◆ Added support for Atmel flash AT26DF081A.
- ◆ Removed support for obsolete qd parameter.
- ◆ Changed the driver to not log events caused by I/O completion errors.

## 6.6 9.1.7.16 QL—02/19/08

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- ◆ Added support for the Windows Server 2008 operating system.
- ◆ Applied a fix to handle logout in the loop environment.

## 6.7 9.1.7.15 QL—10/30/07

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- ◆ Added support for the following devices (supported platforms):
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_01081077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_015C1077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_015D1077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_015E1077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_015F1077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01601077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01611077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01621077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01631077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_01641077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_3261103C (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_3262103C (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_3263103C (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2532&SUBSYS\_3264103C (x86, IA64, x64)

**NOTE:** Microsoft requires x86 and x64 support for all Host Bus Adapters.

- ◆ Firmware versions: 3.03.25 (2Gb), 4.02.00 (4Gb).
- ◆ API version: 1.28.0.50 (QLSDM).
- ◆ Unique assignment of management server N\_Port handle values to be for each virtual port.
- ◆ NPIV (N\_Port ID Virtualization).
- ◆ Target link speed (iiDMA).
- ◆ PcieLinkCap/Stat to HbaDeviceChipProperty.
- ◆ Flash layout regions for 4Gb and returned flash layout table from flash if it is valid.
- ◆ Three Alternate Boot Devices and OOFB (out-of-order frame receive).
- ◆ Removed QL2XHAI2: IHVs are required to use Host Bus Adapter API provided by Microsoft.
- ◆ Preserved BIOS defaults when updating multi-boot image whose BIOS locations can be anywhere in the image.
- ◆ Fixed checksum calculation in QLSDM when two-bios image is flashed.
- ◆ Fixed ER50975: Initiator discovery problem caused a large burst of RSCN activity when the NetApp does its failover. A failed GPNID command occurring during ports discovery must not cause the termination of the discovery process.
- ◆ Handled the case where the GNNFT command was failing due to incorrectly calculated the maximum data response length.
- ◆ Setting the alternate WWN and enabling it in the NVRAM did not propagate through to the Host Bus Adapter. Reading the NVRAM and reinitializing the Host Bus Adapter will handle this case.

## **6.8 9.1.4.16 QL 3.03.21 4.00.26—02/02/07**

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- ◆ Adhered to Subsystem Id document v2.2m+.
- ◆ Firmware versions: 3.03.21 (2Gb), 4.00.26 (4Gb).
- ◆ API versions: 1.28.0.37 (QLSDM), 2.0.0.14 (QL2XHAI2).
- ◆ Fixed ER50975: Initiator discovery problem caused a large burst of RSCN activity when the NetApp does its failover. A failed GPNID command occurring during ports discovery must not cause the termination of the discovery process.

## **6.9 9.1.4.15 QL 3.03.21 4.00.26—11/17/06**

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- ◆ Firmware versions: 3.03.21 (2Gb), 4.00.26 (4Gb).
- ◆ API versions: 1.28.0.37 (QLSDM), 2.0.0.14 (QL2XHAI2).
- ◆ Adhered to Subsystem Id document v2.2m+.

**NOTE:** Microsoft requires both x86 and x64 support all Host Bus Adapters.

- ◆ Added support for the following devices (supported platforms):
  - PCI\VEN\_1077&DEV\_2322&SUBSYS\_01151077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2322&SUBSYS\_01161077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2422&SUBSYS\_1336103C (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_015B1077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_5432&SUBSYS\_01551077 (x86, x64)
  - PCI\VEN\_1077&DEV\_5432&SUBSYS\_01561077 (x86, x64)
  - PCI\VEN\_1077&DEV\_2422&SUBSYS\_014A1077 (IA64)
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_014B1077 (IA64)
- ◆ Removed support for the following devices:
  - PCI\VEN\_1077&DEV\_6312&SUBSYS\_01301077 (x86, x64)
  - PCI\VEN\_1077&DEV\_2422&SUBSYS\_01471077 (IA64)

- PCI\VEN\_1077&DEV\_2432&SUBSYS\_01451077 (IA64)
- ◆ Conformed QLSDM and the driver to the revised for "Get/Set Target Link Speed".
- ◆ Increased loop back test buffer size to 2048 bytes in QLSDM.
- ◆ Closed ER49768: Loopback test always failed when the NVRAM frame size is set to 512 or 1024 (Windows). Pass in transfer size instead of hard-coded value in QLSDM.
- ◆ Handled the case where the device becomes not ready in the StartIO routine.
- ◆ Closed ER48374: SANsurfer 5.0.0 Build 4 – Driver 9.1.3.10b2—Windows IA64 SP1—HP. The Host Bus Adapter model numbers do not show up on Information page.
- ◆ Closed ER48117 (AR 48907, SR70415 [REF:609618455]): Long Erase (0x019) issues with DLT S4 and QLE2462. Error occurs (most likely a bus reset) when running a long erase that takes longer than 110 minutes on the Quantum DLT-S4 (firmware:0808) drive, which exceeds the built in 4Gb firmware timeout limit.

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## **6.10 9.1.3.16 QL 3.03.21 4.00.23—10/05/06**

- ◆ This version replaces the invalid release 9.1.3.15.
- ◆ Firmware versions: 3.03.21 (2Gb), 4.00.23 (4Gb).
- ◆ API versions: 1.28.0.35 (QLSDM), 2.0.0.14 (QL2XHAI2).
- ◆ Removed I/O Reduction support for the 4G Host Bus Adapter.

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## **6.11 9.1.3.15 QL 3.03.21 4.00.23—09/19/06**

- ◆ Firmware versions: 3.03.21 (2Gb), 4.00.23 (4Gb).
- ◆ API versions: 1.28.0.35 (QLSDM), 2.0.0.14 (QL2XHAI2).
- ◆ Added OEM specific support for assigning a virtual world wide port name via registry key.
- ◆ Added "Get/Set" target link speed support.
- ◆ Changed the INF to enable the I/O Reduction for the 4Gb Host Bus Adapter for the IA64 platform based on Microsoft document.
- ◆ Added multiple BIOS support in QLSDM.
- ◆ Initialized debug file name variable during DLL load (QL2XHAI2).
- ◆ Closed EMC OPT23605: x64 Server hangs during boot at the "Applying Computer Settings."
- ◆ Cleaned up code related to get Object text for OS Device Name (QL2XHAI2).
- ◆ Closed ER47338: Attached target devices not visible to OS after server reboot (QLE220).
- ◆ Closed ER47436: Driver not Login into Target Devices (QLE220).
- ◆ Closed ER47530: Topology diagram is not displaying properly when LIP issued on QLA2462 port.

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## **6.12 9.1.2.19 QL 3.03.19 4.00.23—06/30/06**

- ◆ Firmware versions: 3.03.19 (2Gb), 4.00.23 (4Gb).
- ◆ Closed ER46891: Bus Resets Under Heavy I/O Load.
- ◆ API Versions: 1.28.0.33 (QLSDM), 2.0.0.12 (QL2XHAI2).
- ◆ Closed ER47166: SANsurfer FC HBA Manager B83 showed only one port see the storage even though no zoning.
- ◆ Closed OPT 235681: port failure after disconnecting and reconnecting ISL port used by Mirrorview.
- ◆ Closed ER47235: SANsurfer FC HBA Manager does not display the topology view correctly when the Host Bus Adapters are set to loop only until the system is rebooted.

## 6.13 9.1.2.18 QL 3.03.19 4.00.22—06/16/06

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- ◆ Firmware versions: 3.03.19 (2Gb), 4.00.22 (4Gb).
- ◆ API Versions: 1.28.0.33 (QLSDM), 2.0.0.12 (QL2XHAI2).
- ◆ Added VPD update support for 2432 4-port adapter in 1.28.0.33 (QLSDM).
- ◆ Recognized Asynchronous Event 8048h as a valid AEN.
- ◆ Modified timer task to handle the case when Host Bus Adapter is in a stopped state.
- ◆ 24xx only: Added support for NVRAM Nodename option bit.
- ◆ 4Gb only: Added support for reading data from SFP (small form-factor pluggable) optical.
- ◆ transceivers via QLSDM.
- ◆ Adhered to Subsystem Id document v2.2g.
- ◆ Added support for the following devices (supported platforms):
  - PCI\VEN\_1077&DEV\_2422&SUBSYS\_014D1077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_014C1077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_01521077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_01531077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_01541077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_5432&SUBSYS\_014E1077 (x86, x64)
- ◆ Adhered to firmware dump procedure per 2400 Series Firmware Interface Specification version C.
- ◆ Closed ER47113: RX2600 fails to boot Windows after 1MB bin flash—SANSurfer 2.0.30b84\_windows.
- ◆ Fixed: LUNs disappeared after DS4000 controller firmware download in direct attach.
- ◆ Closed ER46586: "Bind By Port ID + Present Targets that are persistently bound only" is not working (in loop environment).
- ◆ Changed to perform the full firmware dump when firmware error occurs.
- ◆ Closed ER46141: JBOD disks turn offline in SANSurfer FC HBA Manager and SANSurfer FC HBA CLI when settings are **Present targets that are persistently bound + Bind by Port ID** (in loop environment).
- ◆ Corrected firmware region size in option ROM layout, that is, firmware size in flash.
- ◆ Closed ER45035: GPN\_ID has wrong payload length after unplug and re-plug.
- ◆ When using the QLSDM to retrieve the transceiver data, you may get SDMGMT\_CANNOT\_GET\_SFP\_DATA error on system platforms using specific models of Supermicro motherboard such as P3TDL3 and P3TDLE. The QLSDM retrieves the transceiver data using underlying 4Gb firmware (v4.00.21) that reports an error code of 4005 for this operation.
- ◆ Verified support for Atmel flash chip AT26DF081A.

## 6.14 9.1.2.16 QL 3.03.19 4.00.18—03/16/06

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- ◆ Firmware versions: 3.03.19 (2Gb), 4.00.18 (4Gb).
- ◆ Adhered to Subsystem Id document v2.2f.
- ◆ Added support for the following devices (supported platforms):
  - PCI\VEN\_1077&DEV\_6312&SUBSYS\_01191077 (x86, x64)
  - PCI\VEN\_1077&DEV\_6312&SUBSYS\_011C1077 (x86, x64)
  - PCI\VEN\_1077&DEV\_6312&SUBSYS\_01301077 (x86, x64)
  - PCI\VEN\_1077&DEV\_6322&SUBSYS\_012F1077 (x86, x64)
- ◆ Set additional firmware option bit 10 for 2Gb Host Bus Adapter so the firmware waits for the task management command, (such as reset LUN to complete.)
- ◆ Closed OPT226506: Host Bus Adapter does not re-login to target after target sends LOGO to Host Bus Adapter.
- ◆ Closed ER44735: The link status behave differently between QLE2460 and QLA2342.
- ◆ Closed ER45228: Incorrect HwVersion string is reported by QLogic IHV HBA\_GetAdapterAttributes call.

- ◆ Closed ER45230: Event Id 11 entries logged by ql2300 at offset x10 and offset x34 do not match the Error Codes published on the Web. Because the miniport uses Microsoft's Storport.sys driver to actually log the error event, and it has been confirmed that the storport.sys driver logs the event incorrectly. A bug has been reported to Microsoft on this: SRX041110604850 (STORport—Incorrect event data is logged when storport's storportlogerror). Meanwhile, the Miniport driver is changed to log the event code at offset x10 by default. This workaround is controlled by the registry parameter `mevtrkaround`. For details on this parameter, please see the readme file.
- ◆ Closed ER45232: Use memory map mechanism in the driver.

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### **6.15 9.1.2.15 QL 3.03.19 4.00.17—02/13/06**

- ◆ Firmware versions: 3.03.19 (2Gb), 4.00.17 (4Gb).
- ◆ Adhered to Subsystem Id document v2.2e.
- ◆ Added support for the following devices (supported platforms):
  - PCI\VEN\_1077&DEV\_5432&SUBSYS\_013E1077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_5432&SUBSYS\_013F1077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2422&SUBSYS\_014A1077 (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2432&SUBSYS\_014B1077 (x86, IA64, x64)
- ◆ Added support to use combined 2Gb IPX firmware.
- ◆ Added support for SST25VF080B flash part.
- ◆ Added option for not to dump code section for 24xx firmware dump.
- ◆ Closed ER44270: Serial number for the 4Gb Host Bus Adapter should be obtained from the VPD.
- ◆ Closed ER38787: Windows 2000/qla2340/veritas tape backup long cable pull failed error message `ERROR_DEVICE_NOT_CONNECTED`.

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### **6.16 9.1.1.15 QL 3.03.18 4.00.12—10/12/05**

- ◆ Firmware versions: 3.03.18 (2Gb), 4.00.12 (4Gb).
- ◆ Closed PTR 90818: QLogic 4Gb driver returns selection timeout immediately after cable pull in an OEM special dual loop configuration.
- ◆ Closed PTR 90652: QLogic Driver returns a selection timeout when rebooting a controller in an OEM special dual loop configuration.

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### **6.17 9.1.0.18 QL 3.03.18 4.00.12—10/11/05**

- ◆ Firmware versions: 3.03.18 (2Gb), 4.00.12 (4Gb).
- ◆ Adhered to Subsystem Id document v2.2d.
- ◆ Added support for the following devices (supported platforms):
  - PCI\VEN\_1077&DEV\_2422&SUBSYS\_12D7103C (x86, IA64, x64)
  - PCI\VEN\_1077&DEV\_2312&SUBSYS\_01491077 (x86, IA64, x64)

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### **6.18 9.1.0.17 QL 3.03.18 4.00.12—09/21/05**

- ◆ Firmware versions: 3.03.18 (2Gb), 4.00.12 (4Gb).

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### **6.19 9.1.0.16 QL 3.03.16 4.00.12—08/29/05**

- ◆ Firmware versions: 3.03.16 (2Gb), 4.00.12 (4Gb).
- ◆ Embedded 24xx firmware in the driver.

- ◆ Closed ER43175: New driver could not detect any device to install as BOOT from SAN on one specific setup.

## 6.20 9.1.0.15 QL 3.03.16—08/10/05

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- ◆ Firmware versions: 3.03.16 (2Gb), (Use onboard 4Gb firmware.)
- ◆ Added 24xx support.
- ◆ Closed ER42601: Need to change bit used to control LED mode.

## 6.21 9.0.2.17 QL 3.03.13—04/07/05

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- ◆ Firmware versions: 3.03.16 (2Gb).

## 7. Firmware (Embedded in Driver)

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This section provides release details for the firmware embedded in the driver, including:

- ◆ [7.1 4Gb and 8Gb Host Bus Adapters](#)

### 7.1 4Gb and 8Gb Host Bus Adapters

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The following lists show the changes and bug fixes to the firmware that is embedded in the drivers for the 4Gb Fibre Channel Host Bus Adapters and 8Gb Fibre Channel Host Bus Adapters from versions 4.03.01 to 4.04.00.

#### Changes by Version

##### **From 4.03.02 to V4.04.00**

ER	Description
ER56370 ER58608 ER59978	Customer-specific change.
ER59630 ER59631	Corrected failures reported by Loopback Mailbox Command (45h) and Echo Mailbox Command (44h). Added sub-error codes to Outgoing Mailbox 3 of the Echo Command to match the Loopback Command.

##### **From 4.03.01 to 4.03.02**

ER	Description
—	Disk CRC and 8Gb Fibre Channel only. Corrected an issue with multi-sequence DIF Remove functionality.
ER58251 ER58760 ER58761	Disk CRC only. Corrected handling of frames received out-of-order in target mode.
ER58532	2532 Disk CRC only. Corrected condition where the firmware would overwrite the IOCB Entry Status field when the device receives invalid IOCBs.
ER58533	2532 Disk CRC only. Fixed a condition that could result in false DIF Errors when receiving runt block data.
ER58783	2532 only. Corrected a RISC pause that occurred when optional external memory is present.
ER58802	Corrected endianness of RNID user defined data field.
ER58897	Set correct Immediate Notify IOCB sub-code during fault injection



ER	Description
ER59100	Improved handling of switches that transition link from F-FL-F when the device is directly connected to a switch port.
ER59279 ER59431	Corrected issues relating to the EHAFT feature.
ER59385	Corrected a target mode issue where an ATIO Queue update interrupt would not be posted when using a small ATIO queue.
ER59503	Corrected a Fatal Firmware Error (8002h) reported when ISP receives FCP_RSP with a payload length greater than 240 bytes. This problem would occur when Command Type 6 IOCB is used with the option to DMA the FCP_RSP payload to the host is enabled.
ER59793	2532 only. Corrected the ending memory address reported by About Firmware Mailbox Command (08h) when external memory is present.
ER59989	2532 only. Corrected the Report Link Statistics information for loop topology.
ER60017	SB2 only. Corrected a problem where the firmware was clearing the N_Port Handle field of a SB2 Send IU IOCB.
ER60067	Disk CRC and 2532 only. Corrected false DMA error reported when using CTIO Type 7 IOCB (Target Mode) with Status Mode 2 selected.
ER60126	Fixed a problem that may cause a target level Task Management Function to fail while a LUN Level Task Management Function is outstanding.
ER60256	MID and 2532 only. Corrected a Fatal Firmware Error (8002h) reported after adapter side fault injection.
ER60301	Corrected a condition where the local loop would not recover after a transmit error was encountered.

## **Bug Fixes by Version**

### **4.03.02 to V4.04.00**

ER	Description
ER59755	2532 only. Enabled additional Fibre Channel SerDes parameters to be set via Flash for mezzanine cards.

### **From 4.03.01 to 4.03.02**

ER	Description
N/A	None.

## **8. Trademarks**

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## 10. Contacting Support

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Please feel free to contact your QLogic approved reseller or QLogic Technical Support at any phase of integration for assistance. QLogic Technical Support can be reached by the following methods:

Web: <http://support.qlogic.com>

E-mail: [support@qlogic.com](mailto:support@qlogic.com)

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